ARGUMENTS/REMARKS

This paper is submitted responsive to the Official Action mailed December 29, 2005.

Reconsideration of the application in light of the accompanying remarks and amendments is respectfully requested.

In the aforesaid action, the Examiner rejected claims 1-7, 17-24 and 26-32 under 35 USC 112, first paragraph. The Examiner supports this rejection stating that these claims omit elements which are essential to practicing the invention, and that the elements omitted are not disclosed in the specification.

The present invention is drawn to a compressor protection module which obtains and analyzes input from the compressor and uses that input to select certain control commands to be issued to the compressor. The Examiner asserts that "there is no recitation of structure which is the recipient of these signals and which would effect these control actions".

First, Applicant respectfully disagrees that this structure must be recited in the claims. The claims are drawn to a compressor protection module, whereas the recipient of these commands is typically a structure of the compressor. Recitation of a completely functional protection module does not at all require the elements indicated as essential by the Examiner. Further, these so-called essential elements, themselves, are not at all considered to be a part of the present invention and hence they are not claimed.

Second, even if these are considered to be essential elements, the Examiner's statement that the specification does not disclose such structure, if that is in fact his holding, is clearly in error. The Examiner's attention is respectfully directed to the specification at page 6, lines 3-7, wherein it is disclosed that "[s]till referring to Figure 1, module 12 may advantageously be communicated with a system control box 40 such that commands issued by processor 14 can be enacted on the compressor, for example to change operating speed, turn off power, control crankcase heater operation, and the like". Such a control box is well known to a person of ordinary skill in the art, as is the hardware and software required to enact control actions such as the commands listed, upon a compressor. This structure is not part of the present invention and is not an essential element of the invention. The claims as pending are properly constructed and are enabled by the instant specification.

In order to further address this rejection, new claims 37-42 have been added, dependent upon currently pending independent claims 1, 4, 17, 20, 24 and 29. Independent claims 37-42 recite the system control box for enacting the commands on the compressor.

Regarding the Examiner's assertion regarding the signal of claim 1, the signal is issued when the appropriate control action is one for prognostic protection. It is believed clear that the signal would be that such protection is needed, but in order to address the Examiner's concerns, claims 1, 17 and 24 have been amended

to state that the signal is a signal indicating that maintenance is needed.

In connection with dependent claim 5, the Examiner has rejected this claim under 35 USC 112, first paragraph, stating that it fails to comply with the written description requirement, specifically stating that the specification as filed does not contain basis for the memory to store a control action indicating that maintenance is needed. The Examiner's attention is respectfully directed to the specification at page 4, line 12, through page 5, line 9, which is reprinted here for convenience:

> Processor 14 in accordance with the invention is advantageously communicated with each of these sensor inputs and has memory programmed with a series of commands adapted to evaluate different combinations of inputs from each sensor and thereby identify correct operating conditions, operating conditions indicating that the compressor is being improperly operated, **operating conditions indicating that the compressor needs maintenance**, operating conditions that indicate that the compressor must be operated under different conditions to avoid damage, and the like.
>
> For example, control unit or processor 14 can advantageously be programmed so as to detect conditions such as a flooded start, liquid slugging, inadequate control of liquid injection volumes and liquid floodback. Each of these conditions can be inferred from different combinations of input from the

sensor inputs, which will then allow for appropriate control actions to be taken.

Module 12 of the present invention can also advantageously be programmed to maintain a given operating condition and will control the compressor in order to maintain the programmed operating parameters. For example in refrigeration applications the compressor is typically controlled to maintain the suction pressure within a given range. By monitoring the suction pressure, module 12 can be programmed to start and stop the compressor and operate the unloaders such that the desired suction pressure is maintained.

The various control actions that may be desirable, along with appropriate input value combinations for using such control actions, are stored in memory in module 12 for use in evaluating actual input and selecting a suitable control action for the compressor. (emphasis added)

Clearly, the specification teaches the subject matter in question, and claim 5 is proper under 35 USC 112, first paragraph.

Based upon the above remarks and the amendments to claims 1, 17 and 24, withdrawal of all rejections under 35 USC 112, first paragraph is respectfully requested.

The Examiner also rejected all pending claims under 35 USC 112, second paragraph, as indefinite. Based upon the foregoing, this rejection should also be withdrawn along

with the rejection under 35 USC 112, first paragraph. The scope of these claims is simple and clear, and the elements indicated as "essential" are not at all essential, and their absence does not render these claims indefinite.

In the aforesaid action, the Examiner rejected claims 1, 2, 3, 17 and 24 as anticipated by U.S. Patent No. 5,820,352 to Gunn et al. Claims 6, 7, 18, 19, 21-23, 26-28 and 30-32 were rejected as obvious based upon a combination of Gunn et al. with Kauffman et al.

In accordance with the present invention, a system and method are provided whereby specific sensor input is obtained from a compressor during operation, and this input is fed to a protection module which is adapted to detect conditions requiring immediate and/or prognostic actions.

In instances where immediate protection is needed, the compressor can be shut down. In other conditions, prognostic protection is appropriate and operation of the compressor can be continued, perhaps at different operating parameters, while a call for maintenance is issued so that the problem can be addressed without interruption of the compressor.

In a preferred embodiment, the invention is provided as a module for communicating with an existing compressor to provide the desired protection. Thus, the present invention contemplates modular and after-market applications which are not possible with hard wired or integrated systems such as the teaching of Gunn et al.

Gunn et al. teach a detailed process for controlling discharge pressure. Any similar subject matter to that of the present claims is hard wired or integrated into the system of Gunn et al., with no suggestion of adaptation to the scope of the present claims on this feature.

The independent claims of the present invention are drawn to a system and apparatus wherein the desired protection is incorporated into a module, rather than hard wired into a particular system or the like. This allows for aftermarket installations and is a distinction from the art of record which is not disclosed or suggested by same.

New dependent claims have been added which are drawn to the control box 40 indicated by the Examiner to be essential. These claims are submitted to be allowable based upon their dependency from independent claims 1, 4, 17, 20, 24 and 29, respectively.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any additional fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,
MICHAEL COLLINS

By _____

George A. Coury
Attorney for Applicant
Tel: 203-777-6628 ext. 113
Fax: 203-865-0297
email: couryg@bachlap.com

Date: June 29, 2006

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313"
on June 29, 2006

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George A. Coury